IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s)	:	Tadayoshi OKADA et al.
Serial No.	:	To be Assigned
Filed	:	Herewith (September 12, 2003)
For	:	HIGH-STRENGTH BOLTED CONNECTION STRUCTURE WITH NO FIRE PROTECTION
Examiner	:	To be Assigned
Art Unit	:	To be Assigned

EXPRESS MAIL NO.: EV 343638561 US

Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

SIR:

Kindly amend the above-identified application before examination and calculation of the filing fee as follows:

IN THE ABSTRACT:

Please amend the originally-filed Abstract as provided below. The modifications are reflected on the Substitute Abstract which is enclosed herewith on separate sheet.

~~The present Invention provides a~~ A high-strength bolted connection structure for realizing a steel structure with no fire protection are provided.[,] ~~which~~ The structure is capable of adequately assuring high-temperature strength of 650°C, and ~~which~~ does not depend on a fire protection or protective structure using fire resistant material.~~, wherein~~ In particular, ultra-high

strength bolts having excellent fire resistance and excellent resistance to delayed fracture ~~are~~ can be used, which ~~bolt~~ have a tensile strength at room temperature ~~(TS)~~ of 1200 N/mm^2 or higher, and ~~satisfies~~ satisfy the relation that the sheer proof stress at high temperature of 650°C ~~(bτt)~~ is not less than (coefficient of slip at room temperature ~~(μ)~~ × design bolt tension ~~(N_0)~~)/ (safety factor for long term load ~~(ν)~~ × cross-sectional area of bolt shank ~~(bAs)~~).

IN THE SPECIFICATION:

Please replace the originally-filed Specification (enclosed herewith) with the Substitute Specification which is enclosed herewith. A marked-up comparison between the originally-filed Specification and the Substitute Specification is also enclosed.

IN THE CLAIMS:

Please cancel originally-filed claims 1-9, without prejudice. New claims 10-18 have been added herein above. According the listing of these claims are as follows:

Claims 1-9 (Cancelled).

10. (New) A high-strength bolted connection structure provided substantially without a fire protection, and having a fire resistance of a steel structure which includes at least one of columns and beams, the structure comprising:

ultra-high-strength bolts, each of the bolts having a bolt tensile strength of at least 1200 N/mm^2 at a room temperature and the fire resistance with a bolt shear proof stress at 650°C satisfying the following:

$$b\tau t \geq \mu \times N_o/(\nu \times bAs)$$